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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,876	07/07/2003	John C. Jones	527122000300	6966

7590 10/16/2007  
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EXAMINER
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DINH, DUC Q

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
10/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/612,876	JONES ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	DUC Q. DINH	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/13/07</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA) in view of Uno et al (U.S Patent No. 5,748, 276), hereinafter Uno.

In reference to claim 1 (AAPA: page 21) discloses a light modulating device (Figs 11) having at least one pixel comprising a plurality of separately addressable sub-pixels of different areas and wherein the area of a first separately addressable sub-pixel (1) is smaller than a area of a second separately addressable sub-pixel (4) wherein the first and second sub-pixels each have an equal number of selectable transmission/reflection levels, said number of selectable transmission/reflection levels being more than two, the device further comprising an addressing means (Fig. 2) for selectively addressing the sub-pixels so as to select any one of more than two transmission/reflection levels (AAPA page 21, lines 16-25).

Accordingly, AAPA discloses everything except the area of the second sub-pixel is not substantially a multiple of the area of the first separately addressable sub-pixel.

Uno discloses in Fig. 1a a pixel of the light modulating device having a pixel comprising subpixel 26b is not substantially a multiple area of the first separately subpixel 26 a

It would have been obvious for one of ordinary skill in the art at the time of the invention to modified the ratio of the sub-pixel areas with areas is not substantially a multiple area of other

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sub-pixels in the device of AAPA in view of the teaching of Uno because by controlling the ratio of display area and the difference in driving voltage between subpixels, the gradation reversal observed from the main viewing angle is removed and good multiple gradation display properties are obtained even in a liquid crystal display unit having only two subpixels for each pixel (col. 7, lines 19-26 of Uno).

In addition, **absent a showing of criticality** and/or unexpected results, it would been obvious to one having ordinary skill in the art change the size of the sub-pixels as desired as was judicially recognized with *IN RE ROSE*, 105 USPQ 237 (CCPA 1955) which recognizes that the change in size or range of well known elements, i.e. sub-pixels, is normally not directed toward patentable object matter.

In reference to claim 2, the AAPA discloses the addressing means is adapted to address each sub-pixel with any one of a predetermined set of addressing waveforms (Figs. 1, 3).

In reference to claims 3 and 4, the AAPA discloses each sub-pixel of a divided pixel can be sub-divided area, i.e. latching regions, with different latching thresholds and are adapted to exhibit the same number of partial latching level (page 4, lines 11-24).

In reference to claim 5, AAPA discloses the area of the second separately addressable sub-pixel has the next largest area to the first addressable sub-pixel Fig. 11, and Uno discloses the second sub-pixel has the next largest area to the first sub-pixel also (see Fig. 1a of Uno).

In reference to claims 6 and 7, refer to the rejection as applied to claim 1 and Figs 1-4, and Fig. 1a of Uno for the limitation the area of each separately addressable sub-pixel is not multiple area of the next smallest separately addressable sub-pixel.

In reference to claim 8, the AAPA discloses the latching regions adapted such that, in certain conditions, partial latching of a latching region can occur (after blanking level the pixel into one stable state and intermediate voltage is applied; page 1, lines 31-34).

In reference to claim 9, the AAPA discloses the ratio of the addressable sub-pixels is chosen so that there is no redundant grey levels when operating conditions that allow partial latching and also when operating conditions that do not allow partial latching (at least two of the bits are addressed with more than two grey levels, i.e. more than just black and white transmission/reflection, and at least one bit is address lesser number of grey level, i.e. there is no redundant grey levels; (page 2, line 32-col. 3, line 2) and bipolar pulse are required to prevent unwanted latching effects due to a net DC across the pixel, i.e.: not allow partial latching).

In reference to claim 10, AAPA discloses in Fig. 11, there are only two addressable sub-pixels and Fig. 1a of Uno shows only two addressable sub-pixels as shown in Figs 1a.

In reference to claim 11, Uno discloses the ratio of the first and second subpixels is chosen from  $n:2n+1$  as claimed.

In reference to claim 12, the AAPA discloses the device is a zenithal bistable liquid crystal display as claimed.

### ***Response to Arguments***

3. Applicant's arguments with respect to the Art Rejection as applied to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection based on the newly discovered art of Uno et al. as elaborated above.

***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DUC Q. DINH whose telephone number is (571) 272-7686. The examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD HJERPE can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DUC Q DINH  
Primary Examiner  
Art Unit 2629